

***NATIONAL WEATHER SERVICE WESTERN REGION SUPPLEMENT 04-2003  
APPLICABLE TO INSTRUCTIONS 20-103  
MARCH 16, 2004***

***Training and Education  
Training and Education, NWSPD 20-1  
Forecaster Development Program Training, NWSI 20-103***

**Forecaster Development Program - Western Region**

**OPR:** W/WR3x1 (M. Mollner)

**Certified by:** W/WR3 (A. Edman)

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***SUMMARY OF REVISIONS:*** This directive supersedes NWSI 20-103, Forecaster Development Program - Western Region, dated 03/02/04. Changes: Due to recent changes in web page architecture, several URLs were updated.

Signed

03/07/05

Vickie Nadolski

Date

Director, Western Region

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1. Introduction. The purpose of this supplement is to provide Western Region supervisors and Meteorologist Interns specific guidance to successfully conduct and participate in the Western Region Forecaster Development Program (FDP). This program is based on the Professional Development Series (PDS) of the National Weather Service (NWS) FDP.
2. Background. The NWS Forecaster Development Plan PDS (or training plan) is a three-phase process geared towards allowing the newly hired Intern to gain the skills and experience needed to fulfill the tasks of an Intern, setting the foundation to become a full performance forecaster (generally 3-5 years after hire). The program is divided into three phases, the first two requiring approximately 1 year for completion: 1) Operational Basics; 2) Forecast Familiarization; and 3) Professional Development.

The goal of Phase 1 is to introduce the Intern to the NWS at the data management level, during which time the Intern performs the duties of the Hydrometeorological Technician (HMT) position. In Phase 2, Interns complete a set of forecast-related training material while

performing the standard HMT duties. These instructional materials will allow Interns to develop a common base of knowledge on operational topics. Phase 3 is a period during which Interns work to advance their scientific and operational growth by initiating and completing a wide variety of educational activities. Examples of such activities would include completing additional computer- and web-based learning modules, gaining hands-on experience on the various forecast desks, conducting a local research project and publishing the results; and working as office focal point in some critical area. The speed at which the Intern passes through the 3 phases is primarily determined by the MIC and the office staffing situation. If the MIC feels comfortable with the Intern's progress, the MIC can assign the Intern to forecast shifts during any phase. Since this is an Intern "development" plan, the MIC is encouraged to assign the Intern forecast shifts as early as possible.

Additional information about the NWS Forecaster Development Program is contained within the web pages of the NWS Training Center, at [www.nwstc.noaa.gov/nwstrn/d.ntp/fdp/](http://www.nwstc.noaa.gov/nwstrn/d.ntp/fdp/).

### 3. Responsibilities

The Western Region FDP leader is the Chief of the Scientific Services Division (SSD), W/WR3. The designated Intern Program Manager, W/WR3x1, is responsible for implementation of the regional program, as well as for the coordination between the NWS Headquarters (NWSH) and the field.

The Meteorologist-in-Charge (MIC) shall be responsible for the FDP within his or her office. Normally the day-to-day management of the program on station is turned over to the Data Acquisition Program Manager (DAPM) or the Science and Operations Officer (SOO). Each staff forecaster [as well as the Warning Coordination Meteorologist (WCM), Service Hydrologist, etc.] is encouraged to act as a mentor to one or more Interns, to contribute the added dimension of experience from one who has been through the program and can offer sound advice and training.

Interns are ultimately responsible for their own professional development, and their future advancement will reflect on their degree of commitment and effort. All Interns shall maintain a file of all important administrative papers, certificates of achievement and/or completion, personnel actions, training records, authored publications, and records of other professional development projects.

### 4. Program Administration

4.1 Performance Plans. The criteria for performance evaluation shall be contained in each Intern's performance plan (General Workforce Performance Appraisal System, or GWPAS), which typically includes such critical elements as Data Acquisition, Service Automation, Information Dissemination, Adaptive Forecasts and Warnings, and Training/Professional Development. The critical elements and their associated activities shall reflect the local office program and needs; current skills of the Intern; and desired knowledge, skills, and abilities.

Within the Training/Professional Development critical element of an Intern's GWPAS or within an Individual Development Plan (IDP), expectations for the completion of specific training activities and modules for the upcoming year shall be listed in detail. Thus, in addition to the minimum training required for promotion laid out in this Supplement, the Intern will have in writing all *additional* training required by his or her supervisor for the coming year.

4.2 Semiannual Intern Progress Reports. In order for the Intern Program Manager to monitor the regional FDP, semi-annual Western Region Intern Training Progress Reports (see Attachment) shall be prepared for all GS-5/7/9 Interns in conjunction with their mid-term and annual performance evaluation. These reports can be included in the semi-annual SOO training report/plan that is submitted to the Chief of the Scientific Services Division. These reports can be used in conjunction with the Individual Development Plan (IDP). For example, the IDP could be virtually the same as the Intern Progress Report, thus eliminating the need for two separate reports. These reports shall indicate the specific training that the Intern has completed to date. The MIC shall be responsible for ensuring that these reports are received by the Intern Program Manager, W/WR3x1, by March 15 and September 15 of each year. The Western Region Intern Training Progress Report form will be updated as necessary and posted to the web at [http://ww2.wrh.noaa.gov/ssd/intern\\_report.pdf](http://ww2.wrh.noaa.gov/ssd/intern_report.pdf).

4.3 Promotion to GS-7/9/11. When an Intern has satisfied the requirements for promotion to the GS-7, GS-9, and GS-11 levels, the MIC shall submit a *Personnel Action Request* form, or SF-52, to WASC, with a copy sent to SSD (attn: W/WR3x1) 8 weeks prior to the Intern's effective promotion date. An updated Intern progress report shall be attached to the form.

The final decision on promotion rests with the MIC. The MIC should use the Western Region Intern Progress Report to assist in the promotion decision making process. Phase 1 should be completed for promotion from GS-5 to GS-7. Phase 2 should be completed for promotion from GS-7 to GS-9. Phase 3 should be completed for promotion from GS-9 to GS-11.

For promotion to each successive grade level, the Intern must have 1 year in grade; proof of completion of the minimum required training (above), in the form of the Western Region Intern Training Progress Report (see Attachment); and MIC endorsement, as shown by his or her signature on the required SF-52, or the signature of the Intern's supervisor.

## 5. Training and Professional Development

5.1 Objectives of Intern Training. As an Intern progresses through the first two of the three-phase FDP (Operational Basics and Forecast Familiarization), the program's two primary goals are realized: to train Interns for their immediate, short-term function in data management, and to train them for a future position as an NWS meteorologist. The former is achieved in large part through on-the-job training. While the latter is also realized in part through on-the-job training, more formal course work and professional development projects play a particularly important part of Intern education and training.

5.2 Course Work.. Formal course work is achieved three ways: on station, through a local

vendor or university, or in residence at another location. On-station training is becoming the primary venue for training in the NWS and takes on many forms, including one-on-one or small-group training with the SOO or other individual; local workshops; self-study courses administered locally or through the Western Region Headquarters (WRH); NWS Training Center (NWSTC) Remote Training Modules (RTM); correspondence courses obtained through, for example, the NWSTC, U.S. Department of Agriculture (USDA), universities, etc.; computer-based training modules; online tutorials; web-based training; and teletraining.

Courses for which tuition is a responsibility of the forecast office shall be paid for through the office training budget, as opposed to WRH or the NWSH. In all but a few special cases, tuition is payable with the station Government Purchase card.

5.3 Professional Development. Professional development is a vital, *ongoing* process for all employees in the NWS, not just Interns. Exposure to a wide variety of professional activities and experiences is enlightening, rewarding, and leads to greater critical insight on the job as well as personal depth. Those who have acquired the richest educational and experiential backgrounds are often the most valued employees in any organization.

Professional development means many things, from additional formal training, to informal visits to other offices of operational interest, to research and documentation, and computer activities. Examples include, but are not limited to:

5.3.1 Workshops. The Intern could conduct or participate in workshops, seminars, or technical discussions that cover methodologies or techniques focused on local forecast and warning problems. These could be conducted at the local office, other WFOs, RFCs, or elsewhere.

5.3.2 Computer Application Programs. This activity consists of developing software for local computer systems, or local applications in AWIPS, that will simplify or enhance station operations. If applicable, these computer programs should be generalized for use by other NWS personnel. Intern projects can also include the evaluation of the application programs and possible improvements and/or extensions to them.

5.3.3 Research Projects. The Intern may wish to conduct or participate in research projects that address important forecast or warning problems. The end objective of such an endeavor should be a formal regional publication (such as a Technical Attachment, or Technical Memorandum); a professional journal; or for presentation at a scientific conference (funds permitting). As with all research projects, the Intern should first coordinate any project of interest with the SOO or DOH. Some examples of typical research projects are:

5.3.4 Case Study. This can be either a detailed post analysis of a significant weather or flood event, or a study directed towards a specific local forecast problem. The intern should develop a specific set of guidelines or procedures for handling similar events in the future.

5.3.5 Climatic Study. This is a review and analysis of the local climatic conditions (or a

specific aspect thereof) that might make use of statistical techniques to derive charts, tables, summaries, or other useful tools for application to local forecasts.

In addition to research-related projects, there exist a number of other office programs in which the Intern may benefit local operations:

5.3.6 Hydrology Program. The Intern may enhance his or her hydrology background by taking university or correspondence hydrology courses (from the USDA or University of Oklahoma, for example). In addition, the Intern could participate in implementing new hydrometeorological/hydrology forecast procedures.

5.3.7 Verification Program. Techniques and procedures associated with local forecast verification activities could be devised and implemented.

5.3.8 Warning Preparedness Program. The Intern could conduct preparedness programs, lead spotter training sessions, or assist in other station preparedness efforts.

5.3.9 Local Information Management. The Intern could serve as a focal point for information management for the station library, the office Internet home page, or assist with the management of local computer systems.

5.3.10 Educational Outreach. The Intern could participate in school visits to the office; visits to area schools, churches, festivals, marine and aviation shows, etc.; the preparation of educational materials for the public; and/or the office Equal Employment Opportunity (EEO) or Diversity programs.

5.4. Office Visits. The Intern shall become familiar with other offices that have a working relationship with their forecast office, such as River Forecast Centers (RFC) and Center Weather Service Units (CWSU). In addition, once the Intern is trained as an aviation forecaster, familiarization flights/"floats" are recommended opportunities, as these activities effectively exposed participants to the needs of those relying on NWS products.

5.5 Training Shifts. The most important of the knowledge, skills, and abilities that an Intern must ultimately bring to his or her eventual role as a full-performance forecaster, is the ability to staff an operational shift. Regularly scheduled training shifts are a critical part of the Intern's development program, and thorough experience in these shifts must be demonstrated prior to the recommendation for promotion to the forecaster level.

5.6 Summary. This document provides the guidelines that will enable Interns and their supervisors to carry out an effective Forecaster Development Program at their Western Region forecast office. However, no set of instructions can address every situation and problem that may arise during one's internship. Common sense and good judgment may at times be the only guidance to address unusual situations. The staff at the Scientific Services Division in general (as well as Meteorological Services and Hydrology Services Divisions), and the regional Intern Program Manager in particular, should always be considered a resource for any needed guidance or suggestions.

**WESTERN REGION INTERN PROGRESS REPORT**

Name: \_\_\_\_\_ Forecast Office: \_\_\_\_\_ Current Grade: GS -

Next Promotion Date: \_\_\_\_\_

Date entered NWS: \_\_\_\_\_

Education (college, highest degree, and year of graduation): \_\_\_\_\_

**PART I.** Indicate completion date of training with supervisor initials. Training listed below each PCU (Professional Competency Unit) are from the NWS FDP Professional Development Series. Links to training material are at [www.nwstc.noaa.gov/d.nfp/fdp/index.html](http://www.nwstc.noaa.gov/d.nfp/fdp/index.html).

**FDP PHASE 1: OPERATIONAL BASICS****PCU 1 - NWS Structure and Administration**

Completion Date	Supervisor Initials	
_____	_____	1.1a FDP Requirements (NWSTC web page)
_____	_____	1.1a FDP Requirements (NWS Instruction 20-103)
_____	_____	1.2a New Employee Orientation Home Page
_____	_____	1.2a OPM Home Page
_____	_____	1.2a NOAA Human Resources (HR) Home Page
_____	_____	1.2a Local ASC Home Page
_____	_____	1.2a Administrative aspects of government and your position
_____	_____	1.2b Diversity CD-ROM - "You and Diversity Management"
_____	_____	1.3a NWS Mission Statement
_____	_____	1.3b NWSTC WBT-005: Introduction to the NWS
_____	_____	1.4a National and local directives and policies
_____	_____	1.4b Electronic mail and Internet
_____	_____	1.4c NWSTC WBT-003: NWS Directives System Training Module

**PCU 2 - Operational Systems/Data Management**

Completion Date	Supervisor Initials
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_____	_____ 2.1a WBT-001: Quality Control
_____	_____ 2.1b SHEF Tutorial (NWSTC)
_____	_____ 2.2a Local AWIPS training
_____	_____ 2.3a Begin WSR-88D Distance Learning Ops Course (DLOC)
_____	_____ 2.4a ASOS Users Guide
_____	_____ 2.4b Surface observation certification (if needed)
_____	_____ 2.5a Section 1 of the CRS User's Manual
_____	_____ 2.5b NWS Instruction 10-1710: NOAA Weather Radio Program
_____	_____ 2.5c Proficiency in CRS operations
_____	_____ 2.6a Upper air proficiency (as required)
_____	_____ 2.7a Local Co-Op Obs Program proficiency
_____	_____ 2.7b NWSTC RTM-600: Co-Op Program Overview
_____	_____ 2.7b NWSTC RTM-610: Co-Op Programs (WSOH02)
_____	_____ 2.7b NWSTC RTM-630: Co-Op Program Forms
_____	_____ 2.7b NWSTC RTM-640: Co-Op Program Awards
_____	_____ 2.7c NWSTC Cooperative Network Operations Course (as required)
_____	_____ 2.8a Local climatology familiarization
_____	_____ 2.8b Local climatology procedures
_____	_____ 2.8c NCDC Home Page

PCU 3 - Forecast Operations

Completion Date	Supervisor Initials	
_____	_____	3.1a NWSTC RTM-500: Clear and Effective Communications
_____	_____	3.2a Local warning procedures
_____	_____	3.2a NWS Instruction 10-511: WFO Severe Weather Products
_____	_____	3.2a NWS Instruction 10-313: Special Marine Warnings
_____	_____	3.2a NWS Instruction 10-601: Tropical Cyclone Products
_____	_____	3.2a NWS Instruction 10-801: Airport Weather Warnings
_____	_____	3.2a NWS Instruction 10-922: WFO Hydrologic Products
_____	_____	3.2b Duties of office warning team
_____	_____	3.2c Your part in the local warning process



_____	_____ 3.2d Storm spotter groups
_____	_____ 3.3a Local hydrology program
_____	_____ 3.3b Local Hydrology Services Manual
_____	_____ 3.3b Hydrology Service Area (HSA) familiarization
_____	_____ 3.3c Hydrology Services Course
_____	_____ 3.3d E-19 familiarization
_____	_____ 3.3e Visit a river gage (if possible)
_____	_____ 3.4a NWS Directives, Supplements & SDM on local public products
_____	_____ 3.4b Establish skills in public products

PCU 4 - General Customer Service

Completion Date	Supervisor Initials	
_____	_____	4.1a Local customer service procedures
_____	_____	4.1b Good telephone etiquette
_____	_____	4.1b Handling media calls
_____	_____	4.1b Conducting office tours
_____	_____	4.1b Handling data requests
_____	_____	4.2a Local procedures on spotter networks
_____	_____	4.2b Spotter networks and local warning program
_____	_____	4.2c Attend a spotter training session
_____	_____	4.3a Local procedures: internal office coordination
_____	_____	4.4a Local procedures: external contacts
_____	_____	4.4b Liaison efforts

FDP PHASE 2: FORECAST FAMILIARIZATION

PCU 1 - Forecast Science and Applications

Completion Date	Supervisor Initials	
_____	_____	1.1a COMET module: The Forecast Process
_____	_____	1.2a Complete 88D Distance Learning Ops Course (DLOC)
_____	_____	1.3a COMET module: Satellite Met: Using the GOES Imager
_____	_____	1.3b CIRA web tutorial: GOES Imager

_____	_____	1.3c CIRA web tutorial: Advanced GOES Imagery Applications
_____	_____	1.4a NWSTC Operational Uses of Lightning Data
_____	_____	1.4a VISIT: Characteristics of Cloud-to-Cloud Lightning
_____	_____	1.5a NWP PDS: Model Fundamentals
_____	_____	1.5a NWP PDS: Impact of Model Structure and Dynamics
_____	_____	1.5a NWP PDS: Influence of Model Physics on NWP Forecasts
_____	_____	1.5a NWP PDS: Intelligent Use of Model-Derived Products
_____	_____	1.5a NWP PDS: Understanding Data Assimilation
_____	_____	1.5a NWP PDS: Characteristics of Current Operational NWP Models
_____	_____	1.5a NWP PDS: Application of NWP Concepts
_____	_____	1.6a COMET: Quantitative Precipitation Forecasting Overview
_____	_____	1.6b Larry Hughes TM and PoP Quiz (NWSTC)
_____	_____	1.7a NWS Instruction 10-901: Hydrologic Services Program
_____	_____	1.7a NWS Instruction 10-921: WFO Hydrologic Operations
_____	_____	1.7a NWS Instruction 10-922: WFO Hydrologic Products
_____	_____	1.7a NWS Instruction 10-940: Hydrologic Services Program
_____	_____	1.7b Local river forecast and warning procedures
_____	_____	1.7c Visit a RFC (if opportunity presents itself)
_____	_____	1.7d COMET: Hydrology, The Headwater Forecast Process
_____	_____	1.8a NWS Instruction 10-805: Transcribed Weather Broadcasts (TWEB)
_____	_____	1.8a NWS Instruction 10-813: Terminal Aerodrome Forecasts (TAF)
_____	_____	1.8b WBT-002: Terminal Aerodrome Forecasts
_____	_____	1.8b NWSTC RTM-251: Introduction to TWEB Forecasting
_____	_____	1.8c DLAC 1: Fog Forecasting/Low Stratus for Aviation Operations
_____	_____	1.8d Practice TAFs and TWEBs
_____	_____	1.8e Visit a CWSU (if opportunity presents itself)
_____	_____	1.9a NWS Instruction 10-512: National Severe Weather Products
_____	_____	1.9b Local effects on convective development
_____	_____	1.9b CWA severe weather climatology
_____	_____	1.9c NWSTC RTM-230: Skew T, Log P
_____	_____	1.10a NWS Instruction 10-513: WFO Winter Weather Products

- |       |       |   |
|-------|-------|---|
| _____ | _____ | 1.10b NWSTC CD-ROM: Intro to Winter Precip Type Forecasting     |
| _____ | _____ | 1.11a NWS Instruction 10-310: Coast Marine Forecast Services    |
| _____ | _____ | 1.12a NWS Instruction 10-405: Fire Weather Services Training    |
| _____ | _____ | 1.14a NWS Instruction 10-501: WFO Statements, Summaries, Tables |
| _____ | _____ | 1.14a NWS Instruction 10-515: WFO Non-Precip Weather Products   |
| _____ | _____ | 1.14b Prepare public products                                   |

PCU 2 - Service and Evaluation

Completion	Supervisor
Date	Initials

- |       |       |                                       |
|-------|-------|---------------------------------------|
| _____ | _____ | 2.1a Local verification efforts       |
| _____ | _____ | 2.2a Local quality control procedures |

FDP PHASE 3: PROFESSIONAL DEVELOPMENT

PCU 1 - Focal Point Duties

Completion	Supervisor
Date	Initials

- |       |       |                                     |
|-------|-------|-------------------------------------|
| _____ | _____ | 1.1a Focal Point duty identified    |
| _____ | _____ | 1.1b Focal Point training completed |

PCU 2 - Outreach Activities

Completion	Supervisor
Date	Initials

- |       |       |   |
|-------|-------|---|
| _____ | _____ | 2.1a Participate in outreach activities     |
| _____ | _____ | 2.1b Local diversity program                |
| _____ | _____ | 2.2a Local external and media projects      |
| _____ | _____ | 2.3a Review WCM home page                   |
| _____ | _____ | 2.4a Presentation software (local training) |

PCU 3 - Training and Research

Completion	Supervisor
Date	Initials

- |       |       |   |
|-------|-------|---|
| _____ | _____ | 3.1a Working knowledge of new meteorological/hydrology concepts |
| _____ | _____ | 3.1b Attend conferences, workshops, etc. (if possible)          |
| _____ | _____ | 3.2a Local seminar or research project                          |

PCU 4 - Career Path

Completion Date	Supervisor Initials
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_____	_____	4.1a Review potential career paths.
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Career path is: \_\_\_\_\_

_____	_____	4.1b Work in desired career path
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_____	_____	4.1c Training for career path
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PART II. Professional Activities Report

NUMBER OF TRAINING FORECAST SHIFTS

Public \_\_\_\_\_ Aviation \_\_\_\_\_ Fire Weather \_\_\_\_\_ Marine \_\_\_\_\_

HYDROMETEOROLOGICAL PROJECTS/STUDIES

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OUTREACH/EDUCATIONAL ACTIVITIES

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MISCELLANEOUS ACTIVITIES (those not included in the FDP PDS)

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SUPERVISORS COMMENTS

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DATE

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SIGNATURE (MIC/HIC or Division Chief)